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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,850	02/05/2004	Thomas A. Trabold	8540G-000238	5755
27572	7590	06/27/2005	EXAMINER	
HARNES, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			MARTIN, ANGELA J	
			ART UNIT	PAPER NUMBER
			1745	
DATE MAILED: 06/27/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/772,850

Applicant(s)

TRABOLD ET AL.

Examiner

Angela J. Martin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-20 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/5/04.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of Species I (claims 1-18) in the reply filed on June 6, 2005 is acknowledged. The traversal is on the ground(s) that Species II is a subspecies of Species I. The restriction requirement filed on May 5, 2005, is hereby withdrawn in this Office Action.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 7-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Marchand et al., U.S. Pat. No. 6,649,297 B1.

Marchand et al., teach a fluid distribution assembly for use in a fuel cell (abstract) comprising a separator plate having a major face, a boundary element over the major face, and a flow field having a channel formed in the separator plate, the channel and boundary element defining a cross-sectional configuration which provides a water accumulation region (col. 3, lines 65-67 and col. 4, lines 1-5). It teaches water accumulation region is at an acute angle of the configuration (col. 8, lines 45-67). It teaches the channel comprises a ramped sidewall such that the acute angle is formed

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at an interface angle (Fig. 7, 8). It teaches the configuration of the channel is v-shaped (claims 19 and 20; Fig. 4, 5). It teaches the configuration is w-shaped (Fig. 5). It teaches the configuration is trapezoidal (col. 9, lines 60-64). It teaches the channel includes a recessed portion (Fig. 4, 5). It teaches the recessed portion is v-shaped (Fig. 4). It teaches a fuel cell comprising a separator, a membrane electrode assembly, wherein the sidewalls intersect the assembly to form a water accumulation region (col. 1, lines 27-46; Fig. 1). It teaches the acute angle is a function of an aspect ratio of a channel width and depth and this ratio is in the range of about 0.25 to 10 (col. 5, lines 41-44). It teaches at least one corner of the cross-section has an angle not greater than about 75 degrees (col. 5, lines 38-40; col. 9, lines 20-22). It teaches at least one corner has an angle in the range of 0-60 degrees (col. 9, lines 43-47). It teaches at least one water accumulation region at a bottom portion of the channel (Fig. 4). It teaches a v-shaped recess formed at bottom portion of channel (Fig. 4). It teaches first, second and third water accumulation regions (Fig. 4, 5).

Thus, the claims are anticipated.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marchand et al., U.S. Pat. No. 6,649,297 B1.

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Marchand et al., teach a fluid distribution assembly as described above.

Marchand et al., do not teach a cross-section is an equilateral or isosceles triangular cross-section.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because although it does not teach equilateral or isosceles, it does teach a triangular cross-section (col. 9, lines 60-64; Fig. 4), which would be equilateral or isosceles depending on the channel configuration and the choice of the artisan.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fly et al., U.S. Pat. No. 6,663,994 B1, teach a membrane electrode assembly having a convoluted shape. Gibb et al., U.S. Pat. No. 6,783,884 B2, teaches a flow field plate having triangular configurations. Dankese, U.S. Pat. No. 3,432,357, teaches a fluid distribution system with triangular and trapezoidal configurations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela J. Martin whose telephone number is 571-272-1288. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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